2.0 NAVY:

The Chief of Naval Operations (CNO) commands the operating forces of the Navy and develops requirements to maintain those forces in the prescribed state of readiness. Under the CNO there are five systems commands (SYSCOM) responsible for meeting the total system and materiel support needs of the Navy operating forces. Those needs are characterized as equipment, weapons and weapons systems, materials, supplies, facilities, maintenance, and supporting services.

Three Navy SYSCOMs, Naval Air Systems Command (NAVAIR), Naval Sea Systems Command (NAVSEA), and the Space and Naval Warfare Systems Command (SPAWAR) are the Navy hardware managers. The Naval Supply Systems Command (NAVSUP) is responsible for supply support and related policy implementation for secondary items. The Naval Facilities Engineering Command (NAVFAC) is responsible for Navy facilities. Field activities under the command of the hardware SYSCOMs perform the depot level maintenance. Depot maintenance on NAVSUP managed inventories is accomplished under the direction of the appropriate hardware systems command at their assigned depots.

To accomplish its mission and maintain a high quality competitive and productive posture, Navy has defined a depot maintenance capital investment strategy based on:

Improvement of Depot Maintenance Productivity: Acquisition of plant equipment and engineering processes and management systems that improves quality, reduces cost, provides measurable labor savings or establishes new capability.

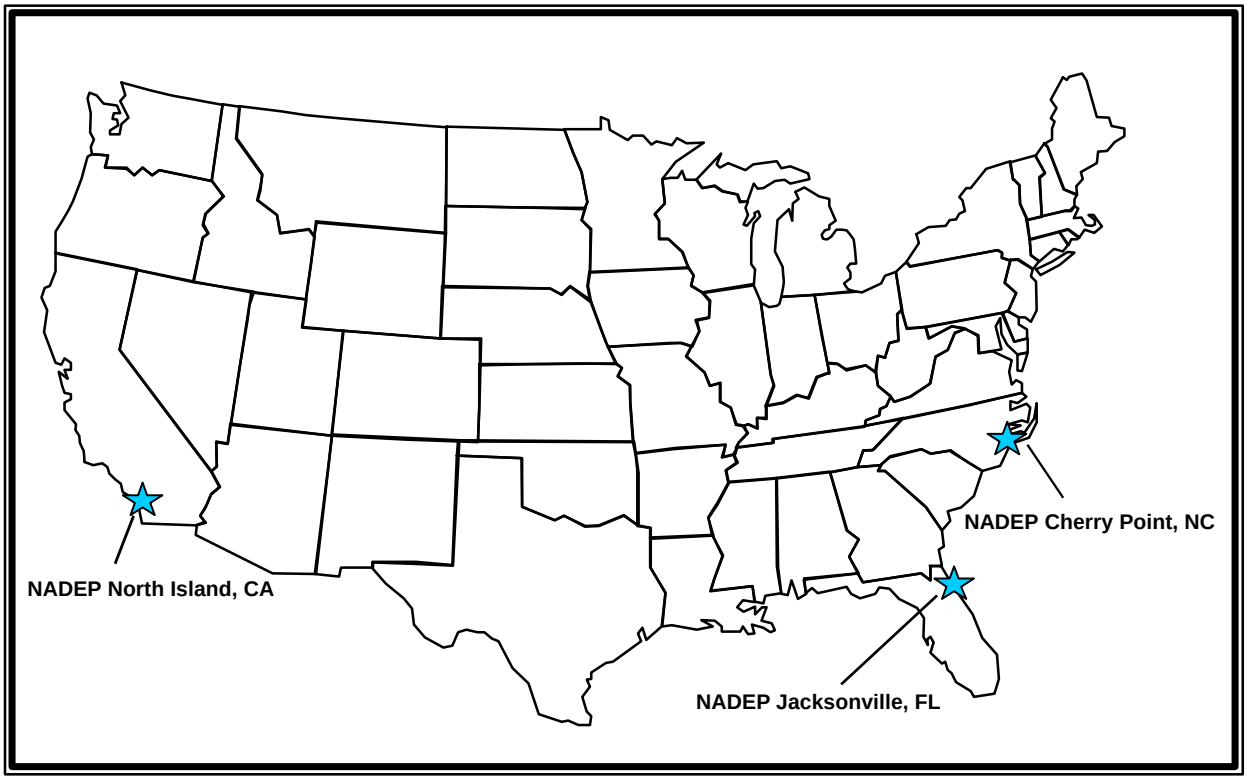
Strategic Acquisitions: Investment to acquire new methods, equipment and capability that allows depot maintenance to provide enhanced support services or is required by developments in overhaul, conversion and repair technology or maintenance. Such investment will encompass adoption of state-of-the-art processes as well as new technological applications that demonstrate substantial benefits for the Navy and other customers.

Replacement and Modernization of Depot Maintenance Resources: Investment in depot maintenance physical plant, property, and equipment that replaces, refurbishes or upgrades existing equipment and facilities.

Navy Initiatives and Mandated Acquisitions: Navy initiatives and directed investments in plant, property, process or equipment encompass mobilization-required acquisitions, directed acquisitions for peculiar support equipment and environmental or occupational regulatory acquisitions.

This capital investment strategy is designed to position the Navy to maximize return from available funds and to act as a blueprint for identifying acquisitions that support the Navy mission and future requirements.

Naval Aviation Depots



2.1 NAVAL AVIATION DEPOTS

The Naval Air Systems Command (NAVAIR) currently operates three Naval Aviation Depots (NADEPs) within the continental United States. These facilities provide cradle-to-grave aviation depot maintenance services to NAVAIR and its customers.

The Naval Aviation Depots provide premier aviation maintenance, logistics, and engineering services. For over 50 years these industrial facilities have specialized in components, support equipment and ordnance equipment, as well as providing associated engineering, logistics and training support.

2.1.1 Naval Aviation Depot (NADEP), Cherry Point, North Carolina

2.1.1.1 OVERVIEW

History:

- Located at the US Marine Corps Air Station (MCAS), Cherry Point, North Carolina.
- Originally established in 1943 as the depot-level assembly and repair facility for the Marine Corps Air Fields Complex near Camp Lejeune.
- After 1945, Cherry Point became an overhaul point for the B-25 medium bomber and, subsequently, for the first jet aircraft the Marine Corps obtained in the late 1940s.
- In 1967 the Overhaul and Repair Department was detached from the MCAS and established as a Naval Air Rework Facility, under command of the NAVAIR representative, Atlantic.
- Is the only Naval Aviation Depot located on a Marine Corps Air Station.

Mission:

The primary mission of NAVAVNDEPOT Cherry Point is to provide our nation with the highest quality, worldwide aviation depot maintenance, engineering, and logistics support on time, at the least cost. Cherry Point serves as a production center performing depot level maintenance, engineering, and logistics support for the Marine Corps, Navy, Air Force, and National Science Foundation aircraft, engines, and associated components. Cherry Point performs standard depot level maintenance, periodic maintenance, modifications, in-service repairs, for crash and battle damages for the following systems:

Aircraft	**Engines**	**Auxiliary Power Units**	
AV-8	F402	GTCP100-82	36-201
H-46	T58	T62T-16A3	T62T-40-1
F-4	T64	GTCP95-2	36-201C
A-4	J79	T62T40LC2	T62T-40-7
C-130	T400	GTCP95-3	T62-16B
CH-53E/D		35-150	
MH-53E		T62T-11	
		36-200	
		T62T-27	

NAVAVNDEPOT Cherry Point has DOD unique capability for testing the F402-RR-406/408. The test cell is a 24-foot cross section cell capable of supporting turbojet and turbofan engines up to 50,000-lbs. thrust and 1000-lb/sec airflow and is designed to accommodate the testing of vectored thrust engines with multiple exhaust nozzles. Other assigned workload is to perform depot repair for approximately 11,847 components which include engine accessories, fairings, actuators, landing gear, electronic black boxes, and control surfaces and numerous auxiliary power units and jet fuel starters. A newly completed test facility for auxiliary power units and jet fuel starters provides the depot with a modern, technologically advanced facility.

NAVAVNDEPOT Cherry Point is the assigned Cognizant Field Facility for the following:

V/STOL	ROTARY WING	FIXED WING
AV-8B	H-46	A-4
V-22	H-1	C-130
	H-2	F-4
	H-3	
	H-53	
	H-60	

ENGINES-V/STOL	ENGINES-ROTARY WING	ENGINES FIXED WING
F402 (AV-8)	T-58 (H-46, SH-2, H-3J79 (F-4)	
T406 (V-22)	VH-3 Presidential)	F405 (T-45)
	T64 (H-53)	T700 (Navy Version)
	T400 (UH-1N, AH-1J)(AH-1Q, SH-60, SH-2G)	

AUXILIARY POWER UNITS

GTCP100-54	GTCP100-82	T62T-40-1
MKIV	GTCP36-150	T45-047
T62T-11	T62T-27	GTCP36-201
GTCP85-56	GTCP85-90	GTCP85-180L
GTCP95-2	GTCP95-3	GTCP85-72
WR-27		

Location:

- Centrally located on the East Coast on the largest MCAS in the world.
- Collocated with MAG-14 (V/STOL) and MACG-28.
- Also located less than 55 miles from MAG-26 and MAG-29 (rotary wing), MCAS New River, NC.
- Situated in Craven County, approximately 95 miles southeast of I-95, and 20 miles from the seaport of Morehead City, North Carolina, and the resort town of Atlantic Beach, North Carolina.

Size:

- Situated on the 144.6-acre tract.
- 102 buildings and structures covering nearly 1.8M SF.
- One-third of the depot's infrastructure is less than ten years old.
- Total replacement value of plant equipment and facilities exceeds $800M.

Work Force/Payroll:

- One of eastern North Carolina's largest employers, maintaining a relatively stable work force of approximately 3,674 personnel.
- Annual payroll of approximately $205.04M.
- The average onboard strength in 1998 was 3,963 civilians and military.

Transportation Access:

- The air station is a major aerial port of embarkment located near three seaports of embarkation (Morehead City, Sunny Point, and Wilmington).
- The depot is located immediately adjacent to the runways servicing the air station.
- Has the capacity to offload aircraft from barges onto the air station.
- Rail service runs onto the air station, and the air station is immediately adjacent to Highway 70, an east-west state maintained four-lane highway.
- Interstate 40, running east west, is approximately 80 miles away.
- Interstate 95, running north south, is approximately 95 miles away.

Environmental Constraints:

This Naval Aviation Depot operates a strong and aggressive environmental program that has frequently been recognized by DOD and private industry as a positive role model, The depot was among the first DOD industries to achieve the initial 50 percent hazardous waste reduction goal. This achievement was a full two years ahead of the target date. By tracking and attacking those processes that habitually contribute specific hazardous waste profiles, the depot, using material and/or process substitution greatly reduced or eliminated entirely some of its waste streams. The depot's ability to regulate and eliminate hazardous waste was recognized and honored when NAVAVNDEPOT Cherry Point was selected as DOD Environmental Showcase Installation in 1992. Recognition has been received from the Environmental Protection Agency for ozone depleting substance elimination in FY93 and FY94. The Governor of North Carolina, Secretary of the Navy and Chief of Naval Operations recognized the 1997 NAVAVNDEPOT Environmental Program’s significant accomplishments of Environmental stewardship.

To limit expenditures of natural resources, the depot initiated an extensive recycling program that encompasses chemicals, cardboard, aluminum cans, metals, paper and glass and plastic abrasive blast media.

2.1.1.2 TECHNOLOGICAL ENHANCEMENTS

Repair Techniques/Processes: Repair techniques and process enhancements include:

- V/STOL Hush House
- Centrifugal Shop-peener Facility
- Titanium Plating Facility
- Pack Aluminizing
- High Velocity Oxygen Fuel (HVOF) Metal Coating System
- Electropheric coating
- Helicopter Dynamic Components Balancing

2.1.1.3 COMMODITIES AND PRODUCTS

Aircraft

Accessories and Components
Armament
Avionics
Engines
Metal Airframe
Non-metal Airframe
Support Equipment

Automotive Equipment

Accessories and Components
Engine

Communications/Electronics

Accessories and Components
Electronics
General Purpose
Power Plants GTE
Radar
Shelter/Housing
Support Equipment

General Support Equipment

Accessories and Components
Electronic Test Equipment
Power Plant/Generator Set GTE
Power Plant/Generator Set Recip

Missile

Accessories and Components
GTE Propulsion
Guidance System
Missile Frame
Support & Launch
Surface Command & Control

Ordnance

Accessories and Components
Engines
Guns & Artillery
Small Arms

Ships

Accessories and Components
Communications & Electronics
General Purpose
GTE Engine
Mechanical

2.1.1.4 PROCESSES AND TECHNOLOGIES

Cleaning/Stripping

Abrasive Flow
Agricultural Media Blast
Glass Media Blast
Grit Blast
Hazardous Chemicals
Non-Hazardous Chemicals
Plastic Media Blast
Sand Blast
Sodium Bicarbonate Blast
Solvent/Aqueous Degreaser
Steam
Ultrasonic
Vapor Degreaser
Vibratory Finishing

Fabrication/Repair

Advanced Composites
Air Conditioning - Freon
Autoclave Large
Autoclave Small
Bearing Process
Blade/Vane
CAD/CAM - Artwork-Flat Wire Cables
CAD/CAM - Artwork-Printed Circuit Bd
CAD/CAM - CNC & NC Programming
CAD/CAM - Drilling/Lathe/Punch
CAD/CAM - EDM
CAD/CAM - Electrolytic Grinder
CAD/CAM - Engineering Analysis
CAD/CAM - Engineering Design/Drawings
CAD/CAM - Forming/Machining/Milling
CAD/CAM - Hybrid Circuits
CAD/CAM - LSI Circuits
CAD/CAM - Machine Tools
CAD/CAM - Printed Circuit Board
CAD/CAM - Sheetmetal
CAD/CAM - Tool Design
CAD/CAM - Vertical Internal Grinder
CAD/CAM - VLSI Circuits
Ceramics
Certified Soldering

Fabrication/Repair

Chemical Forming/Machining/Milling
Class 100,000 Clean Room
CNC Forming/Machining/Milling
Coaxial Cable
Composite Tooling
Cryptographic
Cutting - Gerber-Knife
Cutting - Laser
Cutting - Oxyfuel
Cutting - Plasma
Cutting - Water Jet
Electrical Systems
Electro Optics
Electronic ATE
Electrophoretic Coating
Engineering Design
EProm/Prom Programming
Fiber Optics
Flame Spray
Flat Cables
Flexible Machining Cell
Forming/Machining/Milling
Foundry - Ferrous
Foundry - Non-ferrous
Heat Treating
Hybrid Microcircuit
Investment Casting
Isostatic Press
Ivadizer
Laser Punch
Metal Bonding
Metal Finishing
Metrological
Nonmetal Bonding
Optics
Phosandodize
Photo Etching
Plasma Spray
Plating - AEP
Plating - ALPAC
Plating - Anodize/Oxide
Plating - Cadmium

Fabrication/Repair

Plating - Cadmium/Chromium
Plating - Chemical Conversion
Plating - Chromium
Plating - Copper
Plating - Electroless Nickel
Plating - Gold/Silver
Plating - Nickel
Plating - Nickel/Chromium
Plating - Nickel/Titanium
Plating - Phosphate
Plating - Precious Metals
Plating - Silver
Plating - Tin/Lead
Plating - Zinc
Precision Balancing
Printed Circuit Board
Robotic Blade Weight
Robotic Metal Spray
Robotic Metalizing
Robotic Plasma Spray - Conventional
Robotic Plasma Spray - Low Pressure
Robotic Sand Blast
Robotic Shot Peening
Robotic Welding
Rubber Products
Test Program Sets
Thermoplastics
Tool and Die
Vacuum Brazing
Welding - Arc
Welding - Certified Ballistic
Welding - Dabber TIG
Welding - Electrical Resistance
Welding - Electron Beam
Welding - Electrophoretic Coating
Welding - Inertia
Welding - Laser
Welding - Plasma
Welding - TIG, MIG
Wiring Harness

Test and Inspection

Air/Fuel Flow
Aircraft Rigging

Test and Inspection

Anechoic Antenna Test Chamber
Antenna Test Range
Bearing Process
Bonding Test
Calibration
Cold Proof
Dynamometer - Chassis
Dynamometer - Engine
Dynamometer - Main Rotor Blade
Dynamometer - Transmission
Eddy Current
Eddy Current - Automatic
Electrical Systems
Electron Microscope
Electronic ATE - Altimeter/Gyro
Electronic ATE - Analog
Electronic ATE - Digital
Electronic ATE - Ditmco
Electronic ATE - GenRad
Electrostatic Discharge
Engine Test Cell
Engine Test Cell - Automated
Engine Test Cell - Manual
Environmental Vibration
Fiber Optics
Fluorescent Penetrant - Automated
Fluorescent Penetrant - Manual
Gyro Testing
Helicopter Blade Dynamic
Hush House
Hydraulic Systems
Hydrostatic
Integrated Blade/Vane Systems
Laser Measuring
Load Test
Magnetic Particle
NDI Magnetic Particle
Optical Measuring
Radiography - X-Ray
Spectrographic Analysis
Stress
Tempest Test
Test Tank
Type III Calibration Laboratory
Ultrasonic - Automated

Test and Inspection

Ultrasonic - Manual
Video Inspection Probe
Wind Tunnel 50 - 350 Knots
X-Ray - Film
X-Ray - Real Time
X-Ray - Real Time-Automated

2.1.2 Naval Aviation Depot (NADEP), Jacksonville, Florida

2.1.2.1 OVERVIEW

History:

- The depot is located on the NAS Jacksonville, Duval County, Florida. Eastern boundary is the St. Johns River; western boundary is US Highway 17 and I-295.
- The depot began in 1940 as the Assembly and Repair Department of the Naval Air Station, Jacksonville.
- During World War II, civilians working at the depot were 7,300 and 3,500 military.
- This depot has overhauled and repaired fighters, attack aircraft, helicopters, transports, patrol aircraft, and the NC-121 super constellation reconnaissance aircraft, as well as aircraft engines and aircraft components.
- In April 1967, The Naval Air Rework Facility (NARF) came under a separate command, Commander, Naval Air Systems Command.
- In 1987, the depot was designated the Naval Aviation Depot (NADEP).

Mission:

- The mission of Naval Aviation Depot, Jacksonville, is to provide a full range of high quality maintenance, engineering, logistics and support services to the fleet and other DOD customers at a competitive price. The depot serves as a production center concentrating on repair and modification of patrol, fighter, electronic countermeasure, and attack aircraft, engines and associated components. The depot also performs Standard Depot Level Maintenance (SDLM), modification, and In-Service Repair (ISR) for the P-3, F-14, and EA-6B aircraft. In addition, ISR and field modifications are performed for the F/A-18 aircraft. Depot level maintenance for the F404, J52, TF34, and F1D2 engines is accomplished for applicable service users. Other depot maintenance assignments include electro-optics and electronic warfare, anti-submarine warfare electronics, modifications and conversions, borescopes, bombracks and launchers, and aerial refueling stores and drop tanks. Part of the NADEP JAX workload falls under the heading of Aircraft Support Services. This includes calibration, support equipment, and manufacturing as well as engineering and logistics support, which is provided for aircraft, engines, systems and equipment. Engineering and logistics functions are performed throughout the life cycle of the product, from acquisition through phase-out and FMS support.

- **Aircraft**

P-3 Orion	Antisubmarine patrol aircraft
F-14 Tomcat	Carrier-based jet fighter aircraft
F-18 Hornet	Strike fighter (ISR/MOD) aircraft
EA-6B Prowler	Joint Carrier-based electronic countermeasure aircraft
S-3 Search	Antisubmarine Warfare aircraft

- **Engines**

F404	Powers the F/A-18 aircraft and U.S. Airforce F-117 Stealth Fighter
TF34	Powers the S-3 and the U.S. Air Force A-10 aircraft
J52	Powers the A-4, A-6, and EA-6B aircraft
F1D2	Powers the U.S. Air Force F-117 Stealth Fighter

Location:

- The depot is located on the NAS Jacksonville, Jacksonville, FL.
- Bordered on the East by the St. Johns River, and approximately two miles north of US Highway 17 and I-295.

Size:

- The depot has 102 acres.
- 52 buildings with 2.0 million SF of space.
- The facility replacement value is $328.7M.
- Production equipment is $411.2M.

Work Force/Payroll:

- The depot is the largest industrial employer in northeast Florida and southeast Georgia.
- Annual payroll of approximately $178M.
- Average onboard strength in 1997, 4,053 civilian employees and 35 military.
- Over 130 skilled trades/occupations.

Transportation Access:

- The depot is serviced by highway 17 and two interstates (I-10 and I-295).
- The depot has three entrance gates on U.S. Highway 17.
- Interstate 10, running east and west, is approximately 6 miles from the main gate.
- Interstate 195, running north and south, is approximately 2 miles from the main gate.
- St. Johns River Transportation, Jacksonville area military establishments can tow or barge aircraft to the depot.
- Jacksonville International Airport is approximately 18 miles from the main gate.

Environmental Constraints: Compliance with environmental requirements at NADEP Jacksonville continues to have command focus with an emphasis on pollution prevention. The Environmental Program Office is staffed to the commanding officer. This gives the program greater visibility and power. Environment programs include hazardous waste, air quality, hazardous waste minimization, hazardous material control and management, and solid waste. The Environmental Program Office oversees the execution of a compliance program that is managed by the Environmental Management Board. The board is chaired by the commanding officer.

The hazardous waste minimization military construction project to construct two wastewater treatment facilities to eliminate discharge of the facility's electroplating, chemical conversion coating, and paint stripping wastes is near completion. A second military construction project to eliminate discharge from the final aircraft painting facility is currently under construction. The plants are being constructed to eliminate hazardous wastewater discharge from NADEP Jacksonville.

Increasing environmental compliance legislation is resulting in greater emphasis on environmental programs at the depot. As these laws are passed and subsequent regulations become more numerous and more stringent, the cost of compliance will also increase. However, with our focus on reducing hazardous materials and hazardous waste through acquisition controls, process changes, and material substitutions, the cost will definitely be minimized.

2.1.2.2 TECHNOLOGICAL ENHANCEMENTS

Manufacturing Techniques/Processes:

- Dry ice and flash lamp depainting of aircraft
- Super critical carbon dioxide for cleaning of bearing components
- Application of high solids paint systems
- Use of dry ice pellet blasting for cleaning of Ground Support Equipment
- Aqueous degreasing of components and parts

Repair Techniques/Processes:

- Review of a robotic spray system application for repair of gas turbine engine parts
- Construction of a close looped system to eliminate wastewater discharge from aircraft painting.
- Semi-automated eddy-current inspection for the TF-34 engine disks
- High Velocity Oxy-Fuel (HVOF) metal spray for components repair (complete operational)
- Slurry Blast system for titanium skin cleansing
- Navy Oxygen Cleaning System (replace Freon)
- Laser wire marking for permanent marking of aircraft electrical wire
- Hole through plating for circuit card manufacture

2.1.2.3 COMMODITIES AND PRODUCTS

Aircraft

Accessories and Components
Armament
Avionics
Engines
General Purpose
Metal Airframe
Non-metal Airframe
Support Equipment

Automotive Equipment

Accessories and Components
Engine

Ships

Mechanical
Surface Hull

Communications/Electronics

Accessories and Components
Electronics
General Purpose
Power Plants GTE
Support Equipment

General Support Equipment

Electronic Test Equipment
Power Plant/Generator set GTE
Shelter/Housing

Ordnance

Conventional Arms & Explosives

2.1.2.4 PROCESSES AND TECHNOLOGIES

Cleaning/Stripping

Abrasive Flow
Agricultural Media Blast
Grinder
CO2 Blast
Glass Media Blast
Grit Blast
Hazardous Chemicals
Molten Salt Furnace
Non-Hazardous Chemicals
Plastic Media Blast
Sand Blast
Blast Sodium Bicarbonate
Steam
Ultrasonic
Vapor Degreaser
Vibratory Finishing
Water Jet

Fabrication/Repair

Advanced Composites
Autoclave Large
Autoclave Small
Bearing Process
Blade/Vane
CAD/CAM - Artwork-Flat Wire Cables
CAD/CAM - Artwork-Printed Circuit Board
CAD/CAM - CNC & NC Programming
CAD/CAM - Drilling/Lathe/Punch
CAD/CAM - Electrolytic Grinder
CAD/CAM - Engineering Analysis
CAD/CAM - Engineering Design/Drawings
CAD/CAM - Forming/Machining/Milling
CAD/CAM - Hybrid Circuits
CAD/CAM - Machine Tools
CAD/CAM - Printed Circuit Board
CAD/CAM - Router
CAD/CAM - Sheetmetal

Fabrication/Repair

CAD/CAM - Tool Design
CAD/CAM - Vertical Internal
CAD/CAM - VLSI Circuits
Certified Soldering
Chemical Machining/Milling
Class 100,000 Clean Room
CNC Forming/Machining/Milling
Coaxial Cable
Composite Tooling
Cryptographic
Cutting - Gerber-Knife
Cutting - Laser
Cutting - Oxyfuel
Cutting - Plasma
Electro Optics
Electronic ATE
Engineering Design
EProm/Prom Programming
Fiber Optics
Flame Spray
Isostatic Press
Flat Cables
Flexible Machining Cell
Forming/Machining/Milling
Foundry - Ferrous
Foundry - Non-ferrous
Heat Treating
Hybrid Microcircuit
Hydraulic Systems
Ivadizer
Laser Static Balance
Laser Punch
Metal Bonding
Metrological
Nonmetal Bonding
Optics
Phosandodize
Photo Etching

Fabrication/Repair

Plastic Injection
Plasma Spray
Plating - Anodize/Oxide
Plating - Cadmium
Plating - Cadmium/Chromium
Plating - Chemical Conversion
Plating - Chromium
Plating - Copper
Plating - Electroless Nickel
Plating - Gold
Plating - Gold/Silver
Plating - Nickel
Plating - Nickel/Chromium
Plating - Nickel/Titanium
Plating - Precious Metals
Plating - Silver
Plating - Tin/Lead
Plating - Zinc
Precision Balancing
Printed Circuit Board
Printed Circuit Boards
Robotic Auto Cleaning System
Robotic Metal Spray
Robotic Plasma Spray - Conventional
Robotic Plasma Spray - Low Pressure
Rubber Products
Test Program Sets
Thermoplastics
Tool and Die
Welding - Arc
Welding - Dabber TIG
Welding - Electrical Resistance
Welding - Electron Beam
Welding - Laser
Welding - Plasma
Welding - TIG, MIG
Wiring Harness

Test and Inspection

Air/Fuel Flow
Aircraft Rigging
All Up Round-BIT
Anechoic Antenna Test Chamber
Antenna Test Range

Test and Inspection

Bearing Process
Bonding Test
Calibration
Cold Proof
Dynamometer - Engine
Dynamometer - Main Rotor Blade
Eddy Current
Electrical Systems
Electron Microscope
Electronic ATE - Altimeter/Gyro
Electronic ATE - Analog
Electronic ATE - Digital
Electronic ATE - Ditmco
Electronic ATE - GenRad
Electrostatic Discharge
Engine Rigging
Engine Test Cell - Automated
Engine Test Cell - Manual
Environmental Vibration
Fiber Optics
Fluorescent Penetrant - Automated
Fluorescent Penetrant - Manual
Hush House
Hydraulic Systems
Hydraulic Systems
Integrated Blade/Vane Systems
Large Area Thermography
Laser Measuring
Laser Test Range
Load Test
Magnetic Detection
Magnetic Particle
NDI Magnetic Particle
Optical Measuring
Radiography - Gamma
Radiography - X-Ray
Spectrographic Analysis
Stress
Stress Scan/Roll Scan
Tempest Test
Type I Calibration Laboratory
Type II Calibration Laboratory
Type III Calibration Laboratory
Ultrasonic - Automated
Ultrasonic - Manual

Test and Inspection

Vibration Spectrum Analyzer
Video Inspection Probe
Wirerope/Cable Tension - 200K LBS
X-Ray - Defraction
X-Ray - Film
X-Ray - Real Time
X-Ray - Real Time Automated
X-Ray - Refraction

2.1.3 Naval Aviation Depot (NADEP), North Island, San Diego, California

2.1.3.1 OVERVIEW

History:

- NADEP is the largest tenant activity of the Naval Air Station, North Island, San Diego, California.

- Established in 1919 as part of the air station and was known as the Assembly and Repair Department. Later the name was Overhaul and Repair Department.

- In 1969, the Overhaul and Repair Department was detached from Naval Air Station North Island and established as a Naval Air Rework Facility as a separate command under the Naval Air Systems Command (NAVAIR).

- In August 1987, the command was renamed as the Naval Aviation Depot under NAVAIR.

- Is the largest of three Naval Aviation Depots.

Mission:

NADEP North Island's mission is to serve as the production center concentrating on repair and modification of miscellaneous aircraft and associated components, and to serve as the West Coast Logistics, Program Management, and engineering services point. "Productivity through quality ensures fleet readiness" is NADEP North Island's theme. This is achieved through a wide range of engineering, calibration, manufacturing, overhaul, and repair services for numerous aircraft and ships. Most of the weapons systems programs NADEP North Island supports are managed by the Navy and Marine Corps, but support is also provided for other Services' programs and for National Aeronautics and Space Administration (NASA). Additionally, the DOD Primary Standards Laboratory, headquartered at NADEP North Island, supports and manages Navy and DOD calibration activities worldwide.

NADEP North Island performs standard depot level repair, maintenance, modifications, inservice repairs, voyage repair worldwide, and emergency repairs for crash and battle damages for the following systems:

Aircraft		**Engines**
E-2	Hawkeye	LM2500 Powers Naval Ships
C-2	Greyhound	
S-3	Viking	
F/A-18	Hornet	
F-14	Tom Cat	

NADEP North Island has the unique capabilities as one of the composite repair technology centers; Navy's primary standards laboratory Type I; mobile facilities repair; and serves as dockside carrier repair center on the West Coast.

Location:

- Located on the West Coast of the Continental United States on Naval Air Station, North Island.
- Also located directly across the San Diego Bay from down town San Diego, California.
- San Diego is located in San Diego County and is bordered to the west by the Pacific Ocean and to the south by Mexico.

Size:

- Situated on 358 acres
- 71 buildings covering over 2.2M SF
- Replacement values of facilities and plant equipment exceed $993M.

Work Force/Payroll:

- Naval Aviation Depot North Island is one the largest employers in San Diego maintaining a work force of 3900
- Work force is comprised of 128 different occupational skills.
- Onboard military count of 25 officer and enlisted personnel.
- Annual civilian payroll of approximately $215M and $2M for military.

Transportation Access:

- NADEP North Island is accessible from three major highways; Interstate 5, Interstate 8, and Interstate 15) from the north, northeast, and east.
- The depot is bordered on the San Diego Harbor and is capable of berthing the largest naval vessels with extensive docking for the on/off loading of aircraft, ordnance and cargoes.
- Three major airports, one civilian and two military, plus one military heliport and several smaller civilian facilities serve San Diego access.
- Railroads from the north and east meet at extensive for both freight and passengers.

Environmental Constraints: Naval Aviation Depot North Island is located in one of the most stringent environmentally regulated counties in the United States. To meet this challenge, NADEP North Island developed a proactive environmental program that meets or exceeds compliance with federal, state, and local rules and regulations. NADEP North Island is inspected biannually by the San Diego County Air Pollution District and annually by the California Department of Health Services. The NADEP is also inspected randomly by the California Toxic Substance Control, the Environmental Protection Agency Region 9, the Regional Water Quality Control Board, the San Diego City Metropolitan Industrial Waste Program, and various Department of Defense agencies.

2.1.3.2 TECHNOLOGICAL ENHANCEMENTS

Manufacturing Techniques/Processes:

- Optical measurement system project now in progress with the Navy Manufacturing Technology (MANTECH) program
- Automated Manufacturing Cell linked by digital numerical control system for the manufacture of metallic and composite honeycomb bonded structures (to work with the Optical Measurement System) (This project is now in progress with the Navy MANTECH program.)
- Composites and honeycomb sandwich structure repair/remanufacture
- Large component PMB cell
- Bicarbonate of soda blast system for corrosion removal
- Bearing Refurbishment and Remanufacture
- State-of-the-art calibration standards from the Navy Primary Standards Laboratory with its laser, mechanical, electrical/electronic, and radio frequency (RF) microwave laboratories
- State-of-the-art physical and chemical testing and analysis capabilities from the Materials Laboratory
- NC and conventional machining capabilities
- Electrical/electronic/avionics manufacturing capabilities
- Test program set development and manufacture
- Avionics systems simulator development and manufacture
- Tooling and fixture design and manufacture
- Reverse engineering capabilities
- State-of-the-art non-destructive inspection (NDI) capabilities
- 5-axis Abrasive Water jet cutting system with the ability of cutting up to 6 inches of stainless steel.
- CNC Shotpeening automated process consistent results.
- Hard chrome plating.

Repair Techniques/Processes:

- F/A-18 center barrel fixture which allows removal and replacement of any F/A-18 fuselage section (This technology is also applicable to the F-16)
- AH-1W starter test set using locally designed eddy current brake vice mechanical/hazardous brakes.
- Development and application of environmentally friendly wet process, corrosion and paint removal methods and waste reclamation processes.
- Ongoing development of composite repair and manufacturing capabilities
- Ongoing development of bonded structure (composite and metallic) repair and remanufacture capabilities

2.1.3.3 COMMODITIES AND PRODUCTS

Aircraft

Accessories and Components
Armament
Avionics
Engines
General Purpose
Metal Airframe
Non-metal Airframe
Support Equipment

Communications/Electronics

Accessories and Components
Electronics
General Purpose
Power Plants GTE
Radar
Shelter/Housing
Support Equipment

General Support Equipment

Accessories and Components
Electronic Test Equipment
Power Plant/Generator Set GTE
Power Plant/Generator Set Recip

Missile

Support & Launch

Ships

Communications & Electronics
General Purpose
GTE Engine
Mechanical
Surface Hull

2.1.3.4 PROCESSES AND TECHNOLOGIES

Cleaning/Stripping

Abrasive Flow
CO2 Blast
Agricultural Media Blast
Glass Media Blast
Grit Blast
Hazardous Chemicals
Molten Salt Furnace
Non-Hazardous Chemicals
Plastic Media Blast
Sand Blast
Sodium Bicarbonate Blast
Steam
Ultrasonic
Vapor Degreaser
Vibratory Finishing
Water Jet

Fabrication/Repair

Advanced Composites

Fabrication/Repair

Autoclave Large
Autoclave Small
Bearing Process
Blade/Vane
CAD/CAM - Artwork-Flat Wire Cables
CAD/CAM - Artwork-Printed Circuit Board
CAD/CAM - CNC & NC Programming
CAD/CAM - Drilling/Lathe/Punch
CAD/CAM - Electrolytic Grinder
CAD/CAM - Engineering Analysis
CAD/CAM - Engineering Design/Drawings
CAD/CAM - Forming/Machining/Milling
CAD/CAM - Hybrid Circuits
CAD/CAM - LSI Circuits
CAD/CAM - Machine Tools
CAD/CAM - Printed Circuit Board
CAD/CAM - Router
CAD/CAM - Sheetmetal
CAD/CAM - Tool Design
CAD/CAM - Internal Grinder

Fabrication/Repair

CAD/CAM - VLSI Circuits
Chemical Machining/Milling
Class 100,000 Clean Room
CNC Forming/Machining/Milling
Coaxial Cable
Composite Tooling
Cryptographic
Cutting - Gerber-Knife
Cutting - Laser
Cutting - Oxyfuel
Cutting - Plasma
Electro Optics
Electronic ATE
Engineering Design
EProm/Prom Programming
Fiber Optics
Flame Spray
Flat Cables
Flexible Machining Cell
Forming/Machining/Milling
Foundry - Ferrous
Foundry - Non-ferrous
Heat Treating
Hybrid Microcircuit
Hydraulic Systems
Isostatic Press
Ivadizer
Laser Punch
Laser Static Balance
Metal Bonding
Metal Finishing
Metrological
Nonmetal Bonding
Optics
Phosandodize
Photo Etching
Plasma Spray
Plastic Injection
Plating - Anodize/Oxide
Plating - Cadmium
Plating - Cadmium/Chromium
Plating - Chemical Conversion
Plating - Chromium
Plating - Copper
Plating - Electroless Nickel
Plating - Gold

Fabrication/Repair

Plating - Nickel
Plating - Nickel/Chromium
Plating - Nickel/Titanium
Plating - Precious Metals
Plating - Silver
Plating - Tin/Lead
Plating - Zinc
Precision Balancing
Printed Circuit Board
Printed Circuit Boards
Robotic Auto Cleaning System
Robotic Metal Spray
Robotic Plasma Spray - Conventional
Robotic Plasma Spray - Low Pressure
Rubber Products
Test Program Sets
Thermoplastics
Tool and Die
Welding - Arc
Welding - Dabber TIG
Welding - Electrical Resistance
Welding - Electron Beam
Welding - Laser
Welding - Plasma
Welding - TIG, MIG
Wiring Harness

Test and Inspection

Air/Fuel Flow
Aircraft Rigging
All Up Round-BIT
Anechoic Antenna Test Chamber
Antenna Test Range
Bearing Process
Bonding Test
Calibration
Cold Proof
Dynamometer - Engine
Dynamometer - Main Rotor Blade
Eddy Current
Electrical Systems
Electron Microscope Plating- Gold/Silver
Electronic ATE - Altimeter/Gyro
Electronic ATE - Analog

Test and Inspection

Electronic ATE - Digital
Electronic ATE - Ditmco
Electronic ATE - GenRad
Electrostatic Discharge
Engine Rigging
Engine Test Cell - Automated
Engine Test Cell - Manual
Environmental Vibration
Fiber Optics
Fluorescent Penetrant - Automated
Fluorescent Penetrant - Manual
Gyro Testing
Helicopter Blade Dynamic Balancing
Hush House
Hydraulic Systems
Hydrostatic
Hydraulic Systems
Integrated Blade/Vane Systems
Large Area Thermography
Laser Measuring
Laser Test Range
Load Test
Magnetic Detection
Magnetic Particle
NDI Magnetic Particle
Optical Measuring
Radiography - Gamma
Radiography - X-Ray
Spectrographic Analysis
Stress
Stress Scan/Roll Scan
Tempest Test
Type I Calibration Laboratory
Type II Calibration Laboratory
Type III Calibration Laboratory
Ultrasonic - Automated
Ultrasonic - Manual
Vibration Spectrum Analyzer
Video Inspection Probe
Wirerope/Cable Tension - 200K LBS
X-Ray - Defraction
X-Ray - Film
X-Ray - Real Time
X-Ray - Real Time Automated
X-Ray - Refraction